[1]PL Shupyk National medical academy of postgraduate education, Kyiv, Ukraine, [2]The National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine

OBJECTIVES: Cervical cancer (CC) takes the 3rd place among women cancers globally, accounting for more than quarter of a million deaths annually. In Ukraine it takes the 2nd place of cancers among women aged 15 to 44, accounting for more than 2000 deaths each year. Gradual increase of CC incidence rates during the previous decade is concurrently followed by the decrease of a median age of diagnosis. Incidence rates for CC in Ukraine are estimated to be at least two times higher than in countries with well-organized cervical screening programs. Thus the aim of this study is to evaluate the most efficient cervical screening strategies using "cost-utility" method. **METHODS:** "Cost-utility"-based analysis and evaluation are based on the Resultsof own clinical and laboratory studies of 1257 cervical samples (HPV DNA tests and cytological diagnostics) from women aged 19 – 65 (mean age 30.68 (±7.72)), living in different regions of Ukraine. Statistical and mathematical Methodsare used for modeling the utility function of a number of diagnostic strategies. Analytical representation and evaluation of the data was performed using MATLAB Simulink r2014a software package. **RESULTS:** Initial hypothesis of the utility function form for HPV DNA and cytological tests was put forward. It was assumed that the first test has a maximum utility at a defined age limit due to the age-dependent increase of the probability of cytological test being positive. This Resultsin reduction of the predictive utility of HPV DNA test. The utility function of cytological test must resemble cumulative sigmoid function. Stated hypothesis was verified on the data on HPV DNA presence in normal cytology and cervical intraepithelial lesions using Methodsof mathematical modeling. **CONCLUSIONS:** The study confirmed given hypothesis. The obtained Resultscan be used in "cost-utility"-based method of pharmacoeconomic analysis of different cervical screening strategies

PMD3

EFFECTIVENESS OF THE ANTIBIOTIC-IMPREGNATED CATHETERS IN VENTRICULAR DRAINAGE IN HYDROCEPHALUS PATIENTS – A SYSTEMATIC REVIEW

Oliveira FM[1], Oliveira D[1], Andrade PC[2], Luque A[2], Junqueira Junior SM[1], Cabra HA[3]
[1]Johnson & Johnson Medical Brazil, São Paulo, Brazil, [2]Johnson&Johnson Medical Brazil, Sao Paulo, Brazil, [3]Johnson & Johnson Medical, México, D.F., Mexico

OBJECTIVES: The ventricular drainage of the cerebrospinal fluid (CSF) is an essential procedure in the care of patients with hydrocephalus and intracranial hypertension. However, the literature shows evidences of an infection rate (IR) of 5% to 10%. Infections can cause neurological sequelae and death. To reduce the risk of contamination antibiotic-impregnated catheters (AIC) are indicated. The aim of this study is to systematic review (SR), the efficacy of these catheters. **METHODS:** The electronic databases, MEDLINE via Pubmed, The Cochrane Central Register of Controlled Trials, The Cochrane Library, LILACS, CRD and EMBASE were reviewed until June, 2013. No language and time limits were applied. Meta-analysis, SR and RCTs in patients using AIC in the hydrocephalus treatment with internal or external shunt comparing to standard catheter (SC) were included in this study. **RESULTS:** 232 records were identified. 45 studies were revaluated. 4 met the inclusion criteria – 3 SR and 1 RCT. The first SR evaluated 14 studies. Among the 9,049 cases evaluated, SC and AIC presented an IR of 7.0% and, 3.5% respectively. The second SR evaluated 2,664 cases and observed a global and pediatric IR of 7.2% (SC) and 3.3% (AIC) and 11.2% (SC) and 5.0% (AIC). The third SR showed though a meta-analysis, similar Resultsfor the adult and pediatric population and included the neonate where they observed a significant difference for the AIC in internal shunts: RR:0.37; IC:0.16-0.86; p=0.02. The RCT evaluated the IR for SC and AIC and found a not statistically significant lower IR in the AIC, probably because of the low global IR. **CONCLUSIONS:** The studies suggest AIC reduces infections related to drainage especially in the pediatric population.

MEDICAL DEVICE/DIAGNOSTICS – Cost Studies

PMD4

BUDGET IMPACT MODEL FOR CERVICAL CANCER SCREENING USING HPV TESTS IN CHILE

Franco Figueira S[1], Cachoeira CV[1], Souza FH[1], Kano BY[1], Silva M[2], Poulios N[3]
[1]Roche Diagnostics LATAM, São Paulo, Brazil, [2]Roche Diagnostics Chile, Santiago, Chile, [3] Roche Molecular Systems, Inc., Pleasanton, CA, USA

OBJECTIVES: The aim of this study is to estimate, in Chile, the clinical and budget impact of cervical cancer primary screening with a HPV-16/18 genotyping test which simultaneously detects 12 other high-risk HPV types. **METHODS:** A decision tree framework was used to model the screening and diagnosis of cervical cancer to compare three strategies: (1) Cytology alone – Screening Interval (SI): 3 years; (2) Pooled HPV with reflex cytology – SI: 5 years; (3) HPV with 16/18 genotyping and reflex cytology (cobas® 4800) – SI: 5 years, from a payer's perspective. The impact model was run by having the women cohort progress through the model with 2 screening cycles. In addition, the screening and cancer treatment costs were calculated from FONASA public data (Fondo Nacional de Salud) reported in 2014 converted to US dollars (USD). **RESULTS:** The Budget Impact Model indicates that, when comparing the Strategy 2 and 3 to Strategy 1 there is an increase of ≥CIN2 (Cervical Intraepithelial Neoplasia) cases detected, treated and a reduction at the number of patients progressing to cervical cancer. When comparing the strategy 2 to strategy 1, the model estimated savings of 1.9% at the annual costs, including screening, diagnosis and treatment. There is also a decrease of 25% and 33% at the incidence of Cervical Cancer and Mortality Rate, respectively. Better clinical Resultscould be achieved when the strategy 3 is implemented. An additional investment of only 0.37% at the annual budget would be necessary to decrease the incidence of Cervical Cancer by 43% and the mortality rate by 54% in Chile. **CONCLUSIONS:** This analysis suggests that the use of the HPV genotyping test (strategy 3) is a potential effective management strategy, given that the clinical impacts are highly positives and budgetary impact is basically neutral, comparing to the current screening program in Chile.

PMD5

REDUCING INSULIN SYRINGE REUSE CAN HELP LOWER COST OF INSULIN WASTE IN BRAZIL

DiMario S, Chandran A
Becton Dickinson, Franklin Lakes, NJ, USA

OBJECTIVES: Brazil ministry of health guidance for diabetes management allows for an insulin needle to be reused 8 times. Reuse has been associated with lipohypertrophy. Additionally, diabetes patients with lipohypertrophy require higher doses of insulin. This analysis demonstrates potential cost savings from syringe reuse reduction in Brazil. **METHODS:** A budget impact model was created to demonstrate the relationship between lower syringe reuse and lipohypertrophy rates. It was assumed 90% of patients use syringes in Brazil. An international survey suggests the lipohypertrophy rate is 48%. Another study showed increasing reuse correlates to a higher ratio of lipohypertrophy presence. With estimates including additional insulin requirements for lipohypertrophy, cost of insulin, and annual cost and volume of syringes, the difference between insulin wasted from lipohypertrophy and the cost associated with reducing reuse rate was calculated. **RESULTS:** The estimated insulin injecting population with lipohypertrophy using syringes in Brazil is 691,200. If these patients require 15 units more insulin/day and the cost/unit is $0.03, then the cost of excess insulin is $113.5 million/yr. The difference in rate of lipohypertrophy between reusing 8x (rate of 5.5) and reusing 4x (rate of 2.2) is a factor of 2.5. Based on estimated cost, volume, and currently allowed reuse rate, Brazil spends approximately $22.8 million on insulin syringes. If a reuse rate of 4x was implemented ($45.6 million), Brazil could anticipate a lipohypertrophy reduction of 28.8%, and a $68.1 million decrease in excess insulin. The savings on excess insulin and the incremental investment in syringes ($22.8 million) Resultsin a total savings of $45.3 million/yr. **CONCLUSIONS:** The current acceptable reuse rate in Brazil, 8x, may be driving increased diabetes management costs. Best practice advocates single use. However, if Brazil cuts their reuse guidance in half, they can save $45.3 million/yr from reduced insulin waste.

PMD6

BUDGET IMPACT ANALYSIS OF DRUG COATED BALLOON VS. PERCUTANEOUS TRANSLUMINAL BALLOON ANGIOPLASTY IN THE TREATMENT OF PERIPHERAL ARTERIAL DISEASE IN LOWER LIMBS IN BRAZIL

Pepe C[1], Fahham L[2], Follador W[3], Valencia J[4], Orozco JJ[5]
[1]Grupo Resulta, São Paulo, Brazil, [2]Sense Company, São Paulo, Brazil, [3]Medtronic, São Paulo, Brazil, [4]Medtronic, Miami, FL, USA, [5]Medtronic, Medellin, Colombia

OBJECTIVES: Budget Impact analysis (BIA) of Drug Coated Balloon (DCB) vs. Percutaneous Transluminal Balloon Angioplasty (PTA) in the treatment of Peripheral Arterial Disease in lower limbs in Brazil. **METHODS:** A BIA was performed to assess the incremental budget impact of the incorporation, to the Brazilian public healthcare system, of a method of PTA using a drug coated balloon compared to the currently available technology, using an standard balloon, on the treatment of the peripheral arterial disease, in a 5 years' time horizon. The total amount of PTA procedures on the system was extracted from DATASUS, a nation-wide, anonymous, public healthcare claims database, between 2008 and 2013. Based on this data, the eligible population was projected linearly for the years between 2014 and 2019. Total costs (angioplasty plus surgical revascularization in case of a TLR) per procedure were based on an analytic decision model (R$ 4,415.70 (DCB); R$ 3,720.03 (PTA)). It was assumed that, after the incorporation, all patients eligible to a PTA will undergo the procedure using a DCB instead of the standard balloon. **RESULTS:** The DCB incorporation showed an impact of R$ 1.9 million on the first year (2015) and reached a total amount of R$ 11.8 million in 5 years. The projected impact for the year of 2015 (R$ 1.9 million) represents less than 0.01% of the budget destined to hospital and ambulatory assistance. **CONCLUSIONS:** The incorporation of DCB for the treatment of Peripheral Arterial Disease in Lower Limbs in the Brazilian public healthcare system has low budget impact and it would represent less than 0.01% of the budget destined to hospital and ambulatory assistance.

PMD7

ECONOMIC BENEFITS ASSOCIATED WITH NT-PROBNP TEST IN BRAZIL AND MEXICO

Franco Figueira S[1], Cachoeira CV[1], Souza FH[1], Kano BY[1], Petry Hasegawa AC[2], Bertozzi da Conceicao Duarte G[3]
[1]Roche Diagnostics LATAM, São Paulo, Brazil, [2]Roche Diagnostics Brazil, São Paulo, Brazil, [3]Roche Diagnostics Mexico, Santa Fe, Mexico

OBJECTIVES: The objective of this study is to investigate the economic impact per patient using NT-proBNP test to guide the diagnostic assessment and management of dyspneic patients in the Emergency Department in Brazil and Mexico. **METHODS:** A cost tool was developed based on a decision tree from Siebert study. It was evaluated the standard clinical assessment (strategy 1) with assessment guided by NT-proBNP (strategy 2), from a payer's perspective. The direct medical costs were based on the DATASUS (Departamento de Informática do Sistema Único de Saúde – Brazil) and IMSS (Instituto Mexicano del Seguro Social – Mexico) databases converted to 2015 US dollars (USD). The time horizon was 60 days. Additionally, the sensitivity analysis was performed with a variation of 10%. **RESULTS:** Based on Siebert study, the optimal use of NT-pro-BNP strategy reduces the use of echocardiography from 25% to 10.5% and the average of hospitalization length from 4.41 days to 3.88 days. Therefore, according to our cost tool for Brazil, in the base case scenario, the savings per patient is $218.15, after applying the sensitivity analysis in the best case scenario the savings achieved is $385.23, and in the worst case is $51.07. A similar result could be achieved in Mexico, in the base case scenario the savings per patient is $218.96, while with the sensitivity analysis the savings reached $388.55 for the best case scenario, and $74.50 for the worst case. **CONCLUSIONS:** The optimal use of NT-proBNP test could improve the management of patients with acute Heart Failure according to our analysis. Moreover, it demonstrated incremental value in diagnosis which may result in improved therapeutic decisions and savings for both countries.